

Claims:

1. A radio communication device comprising:
 - an antenna common for transmitting and receiving for meeting a first frequency band and a second frequency band;
 - a first transmitting unit for transmitting so as to meet the first frequency band;
 - a first receiving unit for receiving so as to meet the first frequency band;
 - a first antenna sharing device for connecting an output part of the first transmitting unit to an input part of the first receiving part;
 - a second transmitting unit for transmitting so as to meet a second frequency band;
 - a second receiving unit for receiving so as to meet the second frequency band;
 - a second antenna sharing device for connecting an output part of the second transmitting unit to an input part of the second receiving unit;
 - a wave separator for connecting the antenna to the first antenna sharing device and the second antenna sharing device;
 - a transmitting band switching signal generating unit for operating either of the first transmitting unit and the second transmitting unit to generate a transmitting band switching signal for switching a transmitting frequency band;
 - a receiving band switching signal generating unit for operating either of the first receiving unit and the second receiving unit to

generate a receiving band switching signal for switching a receiving frequency band; and

a control unit for controlling the operations of the first and second transmitting units, the first and second receiving units, the transmitting band switching signal generating unit and the receiving band switching signal generating unit.

2. A radio communication device comprising:

a first antenna common for transmitting and receiving for meeting a first frequency band;

a first transmitting unit for transmitting so as to meet the first frequency band;

a first receiving unit for receiving so as to meet the first frequency band;

a first antenna sharing device for connecting an output part of the first transmitting unit to an input part of the first receiving part;

a second antenna common for transmitting and receiving for meeting a second frequency band;

a second transmitting unit for transmitting so as to meet the second frequency band;

a second receiving unit for receiving so as to meet the second frequency band;

a second antenna sharing device for connecting an output part of the second transmitting unit to an input part of the second receiving unit;

a wave separator for connecting the first antenna or the second antenna to the first antenna sharing device and the second antenna sharing device;

an antenna switching unit for switching the connection of the wave separator to the first and second antennas;

a transmitting band switching signal generating unit for operating either of the first transmitting unit and the second transmitting unit to generate a transmitting band switching signal for switching a transmitting frequency band;

a receiving band switching signal generating unit for operating either of the first receiving unit and the second receiving unit to generate a receiving band switching signal for switching a receiving frequency band;

an antenna switching signal generating unit for delaying the receiving band switching signal by a prescribed amount to generate an antenna switching signal for controlling the antenna switching unit; and

a control unit for controlling the operations of the first and second transmitting units, the first and second receiving units, the transmitting band switching signal generating unit and the receiving band switching signal generating unit.

3. A radio communication device comprising:

a first antenna common for transmitting and receiving for meeting a first frequency band;

a first transmitting unit for transmitting so as to meet the first frequency band;

a first receiving unit for receiving so as to meet the first frequency band;

a first antenna sharing device for connecting an output part of the first transmitting unit to an input part of the first receiving part;

a second antenna common for transmitting and receiving for meeting a second frequency band;

a second transmitting unit for transmitting so as to meet the second frequency band;

a second receiving unit for receiving so as to meet the second frequency band;

a second antenna sharing device for connecting an output part of the second transmitting unit to an input part of the second receiving unit;

an external connector part for connecting an external antenna;

an antenna switching unit for switching the connection of the first antenna, the second antenna and the external connector part to the first and second antenna sharing devices;

a transmitting band switching signal generating unit for operating either of the first transmitting unit and the second transmitting unit to generate a transmitting band switching signal for switching a transmitting frequency band;

a receiving band switching signal generating unit for operating either of the first receiving unit and the second receiving unit to

generate a receiving band switching signal for switching a receiving frequency band;

an antenna switching signal generating unit for delaying the receiving band switching signal by a prescribed amount to generate an antenna switching signal for controlling the antenna switching unit; and

a control unit for controlling the operations of the first and second transmitting units, the first and second receiving units, the transmitting band switching signal generating unit, the receiving band switching signal generating unit and the antenna switching unit.

4. A radio communication device according to any one of claims 1 to 3, characterized in that the first and second transmitting units, the first and second receiving units, the transmitting band switching signal generating unit and the receiving band switching signal generating unit are connected to the control unit by a common three-line serial bus.